

**METHOD AND ARRANGEMENT FOR THE CONTINUOUS MANUFACTURE OF
PROFIED LIGNOCELLULOSE-CONTAINING BOARD OR STRIP-LIKE
PRODUCTS**

5 The present invention relates to a method of continuously producing pro-
filed lignocellulose-containing board or strip-like products according to the pream-
ble of claim 1, and to an arrangement for carrying out the method in accordance
with the preamble of claim 7.

10 A common way of producing, e.g., profiled structural elements such as
skirting boards, cornices, window linings, architraving or furniture components is to
plane or mill the desired profile either from solid wood or from fibreboard, prefera-
bly MDF (Medium Density Fibreboard). The unsuitability of using this technique to
15 mill such products from medium density fibreboard is obvious. Firstly, it would in-
volve a production chain and transport chain consisting of many expensive inter-
mediate steps and operations and would mean that the profiled product would
have different densities in cross-section and therewith absorb different amounts of
paint or varnish at discrete locations. The milling operation would also result in
20 high material losses. For instance, more than 50% of the starting material can be
lost when milling products to pronounced profile depths.

25 A standard example of this production chain may be as follows: Dried and
glue-coated fibres are produced in the MDF plant and shaped into mats which are
pressed into boards which are then edge-trimmed and ground. Losses are experi-
enced in the form of edge trim and dust from the grinding operations. The next link
in the production chain consists in the transportation of board to the production
30 unit for the profiled products. In the third link, the medium density fibreboards are
sawn into strips which form the starting blanks for the profiled products, these
starting blanks being milled and ground as well as lacquered with layers of paint or
varnish or are coated with some type of film for priming or decoration purposes.

 The object of the present invention is to avoid the drawbacks associated
30 with the aforesaid production process in an economical fashion and, instead, to
provide a continuous process up to the finished profiled product with as little mate-

rial loss as possible. This object is achieved in accordance with the invention having the characteristic features set forth in the following Claims.

The invention will now be described in more detail with reference to the accompanying drawing, which illustrates schematically in longitudinal section an inventive plant with four separate cross-sections shown in larger scale.

The illustrated plant is based on the plant illustrated in SE 502 272, which describes a continuous steam injection process. Disintegrated, dried and glue-coated lignocellulosic fibre material is delivered to a forming station 1 and there formed into a fibre mat 3 which is fed into a steam injection press 2. The fibre mat is pressed in the press into a board product 4 which is hardened, or cured, to an extent at which the board is solid and has a given mechanical strength. The surfaces are further densified in a surface densifying unit 5. This process results in board that has a dense outer surface.

According to the invention, the plant is designed for the production of profiled board or strip products in one and the same two-step process. To this end, a milling or cutting roll 6 is arranged between the forming station 1 and the steam injection press 2. The cutting roll 6 functions to impart a profiled surface structure to the lignocellulosic, glue-coated starting material in the form of the fibre mat 3 that has a density of between 20 and 200 kg/m³. To this end, the diameter of the cutting roll 6 varies across its width. The profile imparted to the cross-section of the mat will coincide essentially with the cross-section of the finished product. The profiled mat 3, which may be precompressed, is transported continuously into the steam injection press 2. This press includes a profiled steam roll 7 that has the same profile as the cutting roll 6. The mat 3 is compressed here and hardened to form a board or strip 4 that has the intended cross-section, by injecting saturated or superheated steam into the mat. The surface layers are further compressed in a second step, by allowing the board or the strip 4 to pass through the surface densifying unit 5 that includes one or more hot, compression roll-pairs 8 that have the same geometry as the steam roll 7 but a smaller cross-sectional area so as to obtain the desired surface compression. The surface temperature of the roll pairs 8 may lie between 100 and 350°C, preferably between 150 and 250°C.

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